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Windows laptop specifications checklist

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Laptops are everywhere. From boardrooms to coffee shops, notebook computers have become more than luxuries. For most organizations, regardless of size, laptops are now critical business tools.

Unfortunately, many business owners, consultants and IT departments are too quick to purchase preconfigured units from resellers, office supply superstores, or directly from manufacturers. These systems, especially those offered as part of sales promotions, are frequently underpowered, sometimes include inappropriate or unnecessary software, and often don't have sufficient memory, disk space, or video cards matching the tasks the machine must regularly complete.

This checklist will help ensure that the Windows laptops you specify and purchase meet staff needs not only today but throughout the system's lifecycle. It dedicates separate sections for addressing all the key components, along with a spec sheet that summarizes your selections. After you've entered your selections, you can click the button on the last page to generate the sheet.

Note: We created this checklist as a Word template so that when you open it, you can enter a fresh set of selections, create your spec sheet, and save your results as a new document.

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Display

Increasingly, widescreen displays are the format of preference. If the laptop will frequently be taken on the road, a smaller size may be best to help facilitate travel. Larger external monitors can always be added to a user's desktop to offset smaller screen sizes chosen to favor mobility. However, if the PC will typically be used as a desktop system, and only occasionally be ported offsite, larger widescreen models will likely prove most advantageous (and thereby eliminate the need for a secondary desktop monitor).

- ☑ Select large widescreen models (14-inch widescreen or bigger) if the laptop will primarily be used as a desktop system.
- ☑ Select a smaller model (14 inches or less) if mobile users will frequently travel with the system.
- ☑ If the laptop will not be used with an external monitor, consider upgrading to a W/XGA+ LCD panel. Select W/XGA+ resolution whenever a laptop will be used to display presentations, complex documents or intricate graphics.
- ☑ Select W/XGA+ resolution whenever a laptop will be used to display presentations, complex documents or intricate graphics.
- ☑ Select a display that delivers screen brightness of 180 to 220 nits or more.

Enter Display selection here

Operating system

Frequently small businesses make the mistake of deploying Windows XP Home or Windows Vista Home operating systems. Sometimes the error occurs because organizations are attempting to reduce costs; other times consumer-grade systems are purchased off the shelf from local electronics superstores. With numerous confusing flavors of Windows Vista, the likelihood of specifying the wrong operating system is even higher.

- ☑ For Windows XP installations, if any of the following features are required, Windows XP Professional is required:
  - Domain membership
  - Group Policy usage
  - File-level access controls
  - Remote Installation Service
  - Remote Desktop Connection session (as host)
  - Encrypting File System security
  - Offline Files and Folders
- ☑ Windows Vista Business is required if any of the following features are necessary:
  - Windows Complete PC Backup and Restore
  - Remote Desktop Connection
  - 64-bit platform support
  - Scheduled backups in a business
  - Windows Aero desktop features in a business
  - Secondary display support in a business

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- Windows Fax and Scan
- Tablet PC support in a business

☑ Windows Vista Ultimate is necessary if all of the features of Windows Vista Business are required and any one of the following features are necessary:

- Windows BitLocker Drive Encryption
- Media Center features in a business
- DVD Maker

Enter Operating System selection here

CPU

The CPU, of course, is the engine that powers the PC. Too often organizations, particularly smaller businesses, fail to adequately forecast how much power a laptop will require halfway through its service life. For that reason, consider how the organization's (and user's) needs may grow over the system's lifespan. Ensure a processor is selected that will sufficiently power all applications and software 18-24 months after the system is deployed.

☑ If the system will be used only to complete mundane document and spreadsheet tasks, browse the Internet and send/receive email, consider specifying an AMD Turion 64 X2 Dual Core Processor running at 2GHz or faster speed.

☑ If the system will be used to complete document and spreadsheet tasks, browse the Internet, manage email, deliver presentations and power more intensive proprietary applications, select an Intel Core 2 Duo Processor running at 2.2GHz or faster speed.

☑ If the system will be used to power intensive applications, such as scientific tools, engineering or design programs, or for video editing, consider purchasing an Intel Core 2 Duo Processor running at 2.6Ghz (or faster) with at least 4MB of L2 cache and a 800MHz front-side bus.

Enter CPU selection here

RAM

Memory is often the most underrated component within a laptop computer. RAM is also, quite possibly, the easiest and most cost-effective method of boosting a laptop computer's performance. Unfortunately, most standard laptop configurations underestimate the proper amount of memory a system really requires.

☑ Carefully consider the number of RAM modules being installed. Always specify the largest chips to ensure the system's RAM configuration can be maximized. For example, always opt for a single 1GB chip versus two 512MB chips. Doing so ensures RAM chips won't go to waste down the road should upgrades be required.

☑ For Windows XP installations, 512MB is the minimum configuration you should consider; 1GB tends to provide better, more consistent performance.

☑ For Windows Vista deployments, 1GB is the absolute minimum configuration you should consider, but even then 1GB is typically only sufficient to power the most simple document editing, Internet and email tasks. Most Windows Vista installations will perform best with 2GB of DDR2 SDRAM; consider 4GB of DDR2 SDRAM for Vista laptops that must power intensive graphics or other applications.

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- ☑ Best match memory speeds to the system's front-side bus specifications. Performance may suffer if the system's memory is slower than the system's bus speed capacity, yet many manufacturers list just such setups as standard configurations.

Enter RAM capacity, speed, and number of chips configuration information here

Hard disk

Hard disk storage costs continue to drop, so there's little excuse for a user running out of disk space. With 7200RPM disks priced just slightly above slower 5400RPM models, there's little excuse for users having to suffer through longer seek/write times, either.

- ☑ For mundane document, spreadsheet, email and Internet browsing tasks, seek to include a 7200RPM hard disk with a minimum of 80GB of space.
- ☑ While a 5400RPM model will likely meet present needs, a 7200RPM unit will help ensure reasonable performance two years down the line.
- ☑ Laptops that will be used for digital photography, delivering high quality presentations and fulfilling other data-intensive tasks should be specified with at least 160GB or more of disk space.

Enter Hard Disk requirements here

Video card

Little thought is typically given to a laptop's video card. With the introduction of Windows Vista's Aero interface, and the need for many users to power digital photography, video editing, design or engineering applications, a system's video card becomes a critical component. Often IT departments and end users simply order laptops with base integrated video display adapters; systems performance then suffers dramatically, as such units are unable to properly power users' applications (and system memory is cannibalized in an attempt to accommodate the lack of onboard video RAM).

- ☑ If a system will only be used to create documents, spreadsheets, browse the Internet and send and receive email, typically you can safely configure the laptop with the manufacturer's integrated onboard video card.
- ☑ If the laptop will be used to edit and deliver client presentations, occasionally run a design or digital photography or video editing program, configure the laptop to include a dedicated graphics card possessing at least 128MB of RAM.
- ☑ Systems that will be used to edit video, create and edit architectural and engineering drawings and power other graphics-intensive programs should be specified with dedicated video adapters boasting 256MB or more of onboard memory.

Enter Video Card requirements here

Productivity software

Organizations that purchase office productivity software licenses through a volume or open license or software assurance subscription can skip including office productivity software when ordering laptops. Organizations without

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volume licensing plans typically can maximize office productivity license investments by opting for OEM software licenses when a system is purchased.

- ☑ Determine whether the department/client possesses an open or volume license or maintains a software assurance subscription. If so, confirm that office productivity software licenses will be available for the new laptop(s) being purchased.
- ☑ When nonprofit organizations purchase laptops, buyers should first check with software publishers or authorized outlets (such as Tech Soup) to determine whether they qualify for ultra-low-cost nonprofit licensing. Often discounted pricing available to nonprofits will make purchasing via a nonprofit program much less expensive than an OEM license.
- ☑ Organization's requiring Microsoft Office applications should ensure they select the appropriate suite:
  - Microsoft Office 2007 Basic Edition includes Microsoft Word, Microsoft Excel and Microsoft Outlook.
  - Microsoft Office 2007 Small Business Edition includes the Microsoft Office 2007 Basic's applications and adds Microsoft Outlook Business Contact Manager, Microsoft PowerPoint and Microsoft Publisher to the suite of included tools.
  - Microsoft Office 2007 Professional Edition includes all those programs and adds Microsoft Access.

Enter Productivity Software requirements here

Battery

Battery options and life spans vary widely by manufacturer. However, machines typically can be configured with either six- or nine-cell Lithium-ion batteries. Mobile staff that will frequently use laptops offsite and require prolonged battery life should receive stronger batteries. Other users may find the default battery specifications acceptable.

- ☑ Standard six-cell Lithium-ion batteries can power a Latitude D830 for 5.8 hours (not counting use of wireless networks or mobile broadband communications), according to Dell. Upgrading to nine-cell power extends battery life to 8.7 hours, Dell further claims. If a laptop's user will require extended battery life, opt for the nine-cell model.
- ☑ Beware that more potent batteries sometime change a laptop's footprint; in the case of Dell's nine-cell battery, the battery's form extends beyond the front of the laptop (in the shape of a wrist wrest). If the larger (or heavier) footprint causes mobility issues for a user, consider purchasing a second six-cell battery.
- ☑ Do not select four-cell batteries, as their charge's usual lifespan is often less than three or four hours.
- ☑ Try to avoid purchasing laptop models powered by older Nickel Metal Hydride (NiMH) or Nickel Cadmium (Ni-Cad) batteries.

Enter Battery requirements here

Integrated wireless

Integrated wireless used to be a luxury; now it should be a requirement on any laptop. Thus, ensure new laptop computers not only possess an integrated 802.11 adapter, but an adapter that meets appropriate protocol standards (as in 802.11a/b/g/n).

- ☑ To best meet wireless network connection needs in the future, consider ordering all new laptops with 802.11n-compatible adapters.

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- ☑ Draft 802.11n cards, also called Wireless-N, is a next-generation wireless standard likely to replace 802.11 a/b/g; Most all 802.11n adapters are also 802.11a/b/g backward compatible. If there are any questions as to a specific 802.11n adapter's backward compatibility, check first with the manufacturer before placing an order.
- ☑ If cost is a critical issue, configure new laptop purchases to at least include an integrated 802.11g-compatible wireless adapter.

Enter Integrated Wireless requirements here

Integrated mobile broadband

Integrated mobile broadband (WWAN) connectivity is rapidly replacing WLAN networking as the mobile network connection of choice within many organizations. Once an extravagance, integrated mobile broadband connectivity – with speeds up to 1.4Mbps - has become a necessity within many organizations. While integrated wireless local area network (WLAN) adapters will meet most users' needs, some laptop end users will require mobile broadband connectivity.

- ☑ Include an integrated mobile broadband card on systems when clients request it or when you know clients travel frequently and can or do subscribe to a mobile cellular data plan.
- ☑ IT staff and consultants, of course, must match integrated mobile broadband adapters to the end user's cellular service provider. Before specifying an integrated cellular data card, confirm the end user's cellular provider.
- ☑ Verizon Wireless requires a compatible EV-DO Rev A mobile broadband card. Verizon Wireless advertises downstream speeds of 600Kbps to 1.4Mbps and upstream speeds of 500-800Kbps.
- ☑ Sprint requires a compatible EV-DO Rev A mobile broadband card. Sprint advertises downstream speeds of 600Kbps to 1.4Mbps and upstream speeds of 350-500Kbps.
- ☑ AT&T mobile broadband service requires a compatible HSDPA 3.6-compatible broadband adapter. AT&T advertises downstream speeds of 400-700Kbps and upstream speeds of 250-300Kbps.

Enter Mobile Broadband requirements here

Optical drive

CD-ROMs used to be the optical drive of choice in laptops. In the case of ultra-portable models, connecting an optical drive often required tethering an external drive to the laptop. With the advent of DVD drives, users must now consider whether they require a CD or DVD drive, as well as whether the PC will need to burn optical media (and if so which media at which speeds).

- ☑ Ensure the laptop model being purchased includes an integrated optical drive that does not require tethering an external bay or drive (assuming users will occasionally require an onboard optical drive for installing software or accessing data or files).
- ☑ If cost is a critical issue, opt to configure the laptop with a DVD-ROM drive. Increasingly, software is being distributed on DVDs. Systems that possess only a CD-ROM drive will often prove incompatible when needing to install new programs and applications.
- ☑ If cost is a critical issue and the user will occasionally need to burn 300-500MB of data to optical media, choose a DVD-ROM drive that supports burning CD-Rs at speeds up to 24x or faster.
- ☑ If the end user will occasionally need to burn 600 MB or more to optical disks, select a DVD +/- R drive that burns at 8x speeds or faster.

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- ☑ When specifying an optical drive possessing burning capacity, ensure the manufacturer includes CD and/or DVD burning software with the disk drive. Otherwise, CD/DVD burning options could prove limited and third-party codecs will need to be purchased, installed and configured.

Enter Optical Drive requirements here

Power adapter

On occasion systems manufacturers will include entry-level power adapters with laptops, particularly when advertising laptops in sales circulars or as part of a promotional effort. Such models can be ill-suited for real-world application, however. More powerful adapters help recharge the battery more quickly when the laptop is in use. Further, some adapters enable powering the laptop whether it's being used in an office, on the road or in the air.

- ☑ If cost is a consideration and the PC will only occasionally be used by a mobile end user, select a 65-watt power supply but consider purchasing a 90-watt model instead.
- ☑ If the PC will be used offsite with some consistency, choose a 90-watt power supply. The 90-watt models are able to recharge a battery much more quickly than a 65-watt unit does (particularly when the laptop is in use).
- ☑ If the laptop will frequently be used offsite by mobile employees, including for air travel, order an automobile/aircraft/AC adapter. Such models enable powering the laptop and recharging the battery whether the user in a truck in the field, traveling territories in a rental car or flying.
- ☑ Purchase additional adapters if the end user will frequently be traveling between two or more locations; doing so eliminates the need for the end user to repeatedly unplug the power supply from an office or docking station, instead enabling storage of a second power adapter in a travel bag or at a branch office or home.

Enter number and types of required AC Adapters here

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Spec sheet

Double-click button to update sheet.

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CPU	
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